From: <Jake_Barrow@nps.gov>
To: <gsevr@parks.ca.gov>
Date: 6/10/2005 8:17:19 AM
Subject: Castro Adobe retrofit

Gail Sevrens – Environmental Coordinator
California Department of Parks and Recreation
Northern Service Center
One Capitol Mall, Suite 500
Sacramento, California 95814

Dear Ms. Sevrens,

I am writing to comment on the proposed designs for retrofitting the Castro Adobe. I saw this design proposal in a presentation at a recent conference on seismic strengthening of adobe buildings held in Lima, Peru. In the presentation I saw that 6" diameter cores were being specified for the walls and I am questioning that aspect of the design.

In 2002-04 I managed the retrofit of the National Landmark Las Flroes Adobe near Oceanside, CA on Camp Pendleton for the US Marine Corps. The National Park Service was retained through interagency agreement to assist in this endeavor due to our extensive experience in conserving historic and prehistoric adobe strucutres. This building is similiar in many ways to the Castro Adobe. In our retorfit we drilled 1" diameter holes into which we placed 3/4" threaded rods. This design was later modified for the Carriage House retrofit due to special conditions there. The calculations provided a basis for this design and the USMC opted for a minimal conservative intervention safeguarding the historic fabric as much as possible, but providing for life safety.

Each building is unique and requires an unique individualized approach responding to identified conditions. I am not familiar with the Castro Adobe beyond the images I have seen in the presentation. Therefore I am limiting my comments to the theoretical approach and offering our experience at Las Flores. In my opinion drilling such large holes down through an adobe wall potentially compromises the integrity of those adobes in a dangerous way.

Prior to implementing this proposal I would recommend that the design be peer reviewed by engineers with field experience in adobe stabilization to ensure that this level of intervention is absolutely necessary; and that the drilling procedure be tested on a test wall of similiar dimensioned adobe to fully evaluate the technique. The test wall would not have to be full height but would need to be configured as the original so that it could be drilled in a manner expected in construction. I would expect that the integrity of the adobes could be compromised since this large diameter hole could occur in locations causing blocks to crack.

In any case this proposal specifies a diameter 6 times what we used at Las Flores. Drilling adobe is a difficult task requiring special attention so as not to compromise the interior integrity of the wall. 1" or 2" holes are relatively easy to drill and we saw no problems in our test walls with these diameters.

Thank you and if I can offer any additional comments or assistance don't

hesitate to contact me.

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